

CHAPTER 3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section summarizes the physical, biological, social and economic environments of the affected project area and the potential changes to those environments due to implementation of the alternatives. It also presents the scientific and analytical basis for comparison of alternatives presented in Chapter 2.

The cumulative effects discussed in this section include an analysis and a concise description of the identifiable present effects of past actions to the extent that they are relevant and useful in analyzing whether the reasonably foreseeable effects of the agency proposal for action and its alternatives may have a continuing, additive, and significant relationship to those effects. The cumulative effects of the proposed action and the alternatives in this analysis are primarily based on the aggregate effects of the past, present, and reasonably foreseeable future actions. Individual effects of past actions are not listed or analyzed, and are not necessary to describe the cumulative effects of this proposal or the alternatives. (CEQ Memorandum, Guidance on the Consideration of Past Actions in Cumulative Effects Analysis, June 24, 2005.)

Recreation Capacity and Design

Affected Environment

The Frissell Boat Launch is located within the State Scenic Waterway designated portion of the upper McKenzie River. The Paradise Boat Launch, situated within the Paradise Campground complex, is located at the western terminus of the State Scenic Waterway. Frissell and Bruckart boat launches are both located on the West Cascades National Scenic Byway. Neither facility is signed as a boat launch. No highway approach signing exists to direct recreationists to the launches. Recreational activities and recreational users are diverse in and around the boat launch locations. Scenic viewing is an important recreational activity in the corridor, especially scenic viewing from Highway 126, the river and the McKenzie River National Recreation Trail (NRT). The McKenzie River NRT begins at a developed trailhead at MP 52 on State Highway 126, which is co-located with an interpretative site designed for the West Cascades National Scenic Byway.

The McKenzie River NRT is closely associated with the Frissell boat launch and is visible from the existing launch site. A McKenzie River NRT trailhead is also located within the Paradise Day Use Area. The Paradise Day Use Area is accessed by a shoulderless, two lane paved road. This road accesses a picnic area, amphitheatre, private driveway, restrooms and the Paradise Boat Launch.

The tables below displays use for calendar year 2005. Adding together both launch and take-out, Paradise launch served a total of 6,566 of commercial clients and 331 non-commercial clients, Frissell served 2,509 commercial clients and 190 non-commercial clients while Bruckart served 386,1 commercial

clients and 184 non-commercial clients. A total of 2,250 commercial crafts and 302 non-commercial crafts used these three launches in 2005.

Non-commercial use is determined by a voluntary boater registration card system. Compliance rate of the voluntary system is estimated to be approximately 50% based on days monitored when the registration boxes were in place. Registration boxes were up April to September, but three were vandalized or removed earlier in the season. No reports were made for organized group use in 2005.

Table 2. Recreation Use at the Boat Launches in 2005

	Frissell Launch	Frissell Take Out	Paradise Launch	Paradise Take Out	Bruckart Launch	Bruckart Take Out
Commercial Clients	2,509	0	5,700	866	8	3,853
Non-Comm Clients	187	3	243	88	0	184
Total Clients	2,696	3	5,943	954	8	4,037
Commercial Crafts	489	0	953	151	6	651
Non-Commercial Crafts	66	3	99	66	0	68
Total Crafts	555	3	1,052	217	6	719

Actual numbers would increase with the estimated 50% non-commercial trips that did not participate in the voluntary registration system and by approximately 25% for the portion of the year that the boxes were not in place. Table 4 provides use numbers with the estimated increases:

Table 3. Estimated Recreation Use at Boat Launches for 2005

	Frissell Launch	Frissell Take Out	Paradise Launch	Paradise Take Out	Bruckart Launch	Bruckart Take Out
Total Clients	2,929	7	6,246	1,064	8	4,267
Total Crafts	637	7	1,175	299	6	804

Although not an issue during the Upper McKenzie River Plan (Upper McKenzie River Management Plan, 1992), crowding at river launch facilities is now known to be an increasing problem. The McKenzie River is accessed by 14 boat launches; however, there is uneven use across boat launches with some receiving the majority of use and some having almost no use. Over 500 commercial trips launched at Paradise and nearly 300 commercial trips took out at Bruckart in 2001. 71 commercial trips launched at Frissell in the same year. Commercial group sizes range from as few as one client to over 40. In 1990, approximately 4500 boaters were estimated to have floated the river stretch between Olallie and Blue River. The

majority of these boaters, both commercial and private, used Paradise Boat Launch (Moran, 1990). Records indicate that commercial use has steadily increased since 1990. Although there is inconclusive information regarding waiting times at launches, boaters have expressed frustration regarding delays at take-outs and waiting time at put-ins. Crowding and competition for parking, however, is clearly an issue at some launches, particularly at Paradise.

Issue of Recreation Capacity

The design of the launch facilities may affect the number of people and number of crafts that can be accommodated at each site at one time, and the amount of crowding that occurs at each facility. This issue is measured qualitatively. The effects are based on the degree to which the alternatives affect the number of people and number of crafts that can be accommodated at the site at one time. Factors considered when assessing each of the alternatives included degree of crowding at each facility, amount of vehicle parking area available at each launch site, amount of staging area space available at each launch site, and numbers of people and craft accommodated.

Environmental Consequences

Effects of Alternative 1 - No Action

Under the no action alternative, the amount of vehicle parking space and staging area space at each of the launch sites would not be changed. Numbers of craft accommodated at one time would not change. Crowding at launch sites could increase as river use increases over time.

Effects of Alternative 2 – Proposed Action

Direct and Indirect Effects

Frissell: Under this alternative there is no net gain of parking as compared to the current location of the Frissell launch. However, crowding at the launch site would be reduced by the addition of a formal staging area that is not currently available at the existing Frissell launch.

Paradise: This alternative would increase the number of people and craft accommodated at Paradise due to an increase in roadside parking, the addition of a second staging area, and the addition of another ramp allowing more than one craft to be launched at one time. Improvement of a trail access to the staging area below the ramp would reduce crowding at the shoreline.

Bruckart: Under this alternative there is no net gain of parking as compared to the current location of the Bruckart launch. However, crowding at the launch site would be reduced by the addition of a formal staging area that is not currently available at the existing Bruckart launch.

Effects of Alternative 3

Direct and Indirect Effects

Frissell: This alternative would reduce the numbers of people and craft accommodated at the Frissell launch at one time due to the redesign of traffic control to meet Oregon Department of Transportation standards along Highway 126. Total parking and staging area would be reduced at Frissell under this alternative.

Paradise: Same effects as in Alternative 2.

Bruckart: The amount of vehicle parking space at Bruckart would be reduced due to design of traffic controls to meet Oregon Department of Transportation standards along Highway 126. Crowding would not be reduced at Bruckart under this alternative as no additional staging area or pedestrian access would be developed.

Safety and Access

Affected Environment

The Frissell Boat Launch and aggregate surfaced parking area is located adjacent to State Highway 126. There is no directional signing for traffic flow in and out of the site, nor any indication of desired parking patterns. The current ramp is steep, constructed with embedded wooden poles, cabled together and placed in a step pattern to retain the aggregate from sloughing into the river. The ramp is on the outside of a curve and high river flows routinely erode the bottom of the ramp. Regular aggregate replacement is required to keep this ramp in its current condition. It is generally positioned perpendicular to the river. The bottom of the ramp exceeds 50% grade. The middle portion is approximately 30% grade with the top leveling out to a 15% grade. Over the entire ramp the average grade is 26%.

Paradise Boat Launch is in a developed day use area with paved access road and parking areas. There is a paved one-way loop road that provides convenient truck and trailer access to the ramp. The current ramp is aggregate and wide enough for two crafts to put in unless the first one in decides to use the middle of the ramp. There have been complaints that the grades are too steep and when rigs pull out of the ramp they spin their tires and throw aggregate. This ramp requires minor annual maintenance.

Bruckart Boat Launch is in many ways similar to Frissell Boat Launch, located adjacent to the state hwy 126, aggregate parking area and a steep ramp located on the outside of a curve in the river. During high flows the ramp is undercut. Efforts at minimizing this have been made by placing large riprap up stream of the ramp and are successful for a few years time. The current ramp is asphalt with grades exceeding 35% at the bottom of the ramp and decreasing to 15% at the top. Over the entire ramp the average grade is 22%.

Issue of Safety and Access

High velocity river flows at Frissell and Bruckart sites make it hazardous to launch or land at these facilities. Analysis of this issue included the qualitative description of river velocity in the immediate area of the launch and proposed locations by alternative. A qualitative estimate was chosen to capture the safety considerations. River velocities are described qualitatively in the immediate vicinity of existing ramps and proposed relocation sites.

The steep condition of the ramps at Frissell and Bruckart also make it hazardous for people to access the boats. Analysis of this issue is also measured by the grade of the ramp, location of ramp, and surface type of ramp existing ramps in relation to proposed designs.

The effects of the alternatives on this issue are based on the degree to which the alternatives affect the safety of the users in accessing boats and rafts. Factors considered when analyzing each of the alternatives included the percent slope of each ramp and the angle of Frissell and Bruckart ramps to the river.

Environmental Consequences

Effects of Alternative 1 – No Action

Under the no action alternative, the percent slope of each ramp and the angle of the ramps would not be changed. Consequently, the safety of the users while accessing boats and rafts would not be changed. The ramps would remain in their current locations at Frissell and Bruckart which would maintain their site on the main current side of the river channel. There would therefore be no change in the hazardous conditions at these launch locations. Since Paradise launch is at the bottom of a cobble bar in relatively quiet water it is not as hazardous to launch from. Under the no action alternative the condition would remain the same.

Effects of Alternative 2 – Proposed Action

Direct and Indirect Effects

Frissell: This alternative of relocating to below Frissell-Carpenter Bridge would increase the safety of the users while accessing their river craft by reducing the grade of the ramp. The relocation site downstream of Frissell-Carpenter Bridge is on the inside of the river bend near the top of a small cobble bar. It creates conditions where the river bank is not as steeply entrenched and the river velocities are less than current ramp locations. All of these conditions make it possible to place a boat ramp at a relatively flat grade (12-15%) and improve access conditions.

Paradise: Since Paradise launch is at the bottom of a cobble bar in relatively quiet water it is not as hazardous to launch from, but this alternative should increase the safety of the users by reducing the grade of the ramp, increasing the width and providing a concrete surface.

Bruckart: Relocating the ramp to below Bruckart Bridge would increase the safety of the users while accessing their river craft by reducing the grade of the ramp. It would also improve conditions for landing craft at the launch. The relocation site downstream of Bruckart Bridge is on the inside of the river bend near the top of a small cobble bar, which creates conditions where the river bank is not as steeply entrenched and the river velocities are less than current ramp locations. All of these conditions make it possible to place a boat ramp at a relatively flat grade (12-15%) and improve access conditions.

Effects of Alternative 3

Direct and Indirect Effects

Frissell: Alternative 3 would increase the safety of the users by reducing the grade of the ramp and providing a concrete surface. The ramp would be constructed at an approximately 45 degree angle to the river. This increases the horizontal length of the ramp, reducing grades to 20% or less.

This alternative maintains the ramp on the main river current side of the channel. Changing the angle of the ramp and reducing its grade would reduce hazards associated with accessing the boat by foot and loading into the boat. However, by keeping the ramp in its current location, it retains those hazards associated with fast moving water (i.e. difficult landing and launching). In contrast, Alternative 2 would have a greater reduction in hazards due to a relative reduction in river currents on the inside bend of the river channel.

Paradise: Same as in Alternative 2

Bruckart: This alternative would increase the safety of the users by reducing the grade of the ramp and providing a concrete surface. The ramp would be constructed at an approximately 45 degree angle to the river, which increases the horizontal length of the ramp and reducing the grade to 15% or less. The safety of vehicle traffic in and out of the site would be increased by signing and pavement markings.

This alternative maintains the ramp on the current side of the main river channel. Changing the angle of the ramp reduces its grade and reduces hazards associated with accessing the boat by foot and loading into the boat. However, by keeping the ramp in its current location retains those hazards associated with fast moving water (i.e. difficult landing and launching). In contrast, Alternative 2 would have a greater reduction in hazards due to a relative reduction in river currents on the inside bend of the river channel.

Cumulative Effects

The existing boat ramps and launches at Frissell, Paradise, and Bruckart have evolved since they were built, and have been contributing to river-oriented recreation opportunities for the public over the past several decades.

Ramp relocations at Frissell and Bruckart, with more defined parking and staging areas and the improved access at Paradise in the Alternative 2, accommodate the existing demand by the public and reduce crowding. At Paradise Day Use Area, more people and water craft may be accommodated at one time. Under Alternative 2, access and safety would be improved for people and water craft due to firmer or more stable ramp surfaces and reduced slopes.

Although Alternative 3 improves access and reduces safety hazards Frissell and Bruckart, currently available parking space and staging areas may be reduced to accommodate the redesign of traffic controls to meet highway transportation standards.

There are no reasonably foreseeable future management actions which would contribute to changing the capacities for launching boats, amount of parking space for vehicles, designation of staging areas, ramp slope and surface, access or safety for people utilizing these facilities. No further improvements to the three boat launch facilities and no development of additional boat launch facilities are planned.

Threatened, Endangered, Sensitive (TES) Fish, and Management Indicator Species (MIS) Fish

Affected Environment

The bull trout (*Salvelinus confluentus*) and the Upper Willamette spring chinook salmon (*Oncorhynchus tshawytscha*) are both species listed as threatened under the Endangered Species Act. Coastal cutthroat trout (*Oncorhynchus clarki*) and rainbow trout (*Oncorhynchus mykiss*) are Management Indicator Species (MIS). All species can be found in the project area during portions of their life history.

Migratory Habitat

There are no barriers to migration in the project area. Trail Bridge Dam is a barrier to migration in the main stem McKenzie River and is approximately five miles upstream of Frissell Boat Launch (the most upstream of the three launches in the project area).

Spawning Habitat

Cutthroat trout tend to spawn in small tributaries of the McKenzie River. Rainbow trout have been observed spawning in the mainstem McKenzie River, but no redds were observed during spawning ground surveys.

Bull trout do not spawn near any of the boat launch locations. Bull trout spawning occurs in tributaries over 4 miles upstream of Frissell Boat Launch where ground water from the high cascades provides stream temperatures cold enough for incubation and early rearing.

Spring Chinook salmon spawn throughout the McKenzie River. Important areas include the tail-outs of pools, side channels, and gravel depositional areas associated with large wood or some other physical

feature. Spawning ground surveys have been conducted at all boat launch sites and the following paragraphs summarize results of those surveys.

At Frissell, the river at the existing site and the proposed site are high velocity rapids. This does not provide suitable spawning habitat for TES/MIS fishes. The closest spawning site downstream of the Frissell location is at tail-out of “Blue Pool” which is approximately ½ mile downstream. One spring Chinook redd was observed at Blue Pool in 2006.

At Paradise, the channel downstream of the ramp on river left is a rapid and is bordered by rip-rap along Paradise campground. This does not provide good spawning conditions for spring Chinook salmon. However, shallow margin habitat on river right (the inside of the river bend) could provide spawning sites but no redds have been observed during spawning ground surveys. Side channels further downstream (about 1 river mile) are areas of known salmon spawning.

At Bruckart, the closest known salmon spawning habitat is 1,000 feet downstream of proposed ramp site. Chinook have been seen spawning 500 feet downstream of the existing Bruckart Boat Launch on the opposite side of the river. Turbidity is not expected to reach any further than 300 feet downstream, and if a pulse did occur due to rehabilitation or construction activities it would not cross the river, but rather would stay on the main current side of the river.

Rearing Habitat

Bull trout have specific habitat requirements depending on the life history stage. Bull trout fry and juvenile rearing habitat is found in the same streams where spawning occurs. Some older juveniles (3 and 4 year old) could rear in the vicinity of Frissell Boat Launch due to the cold temperatures in the river, but it is unlikely these juveniles rear downstream near Paradise and Bruckart boat launches. Sub-adult (4 and 5 year old) and adult (5 years and older) have suitable water temperature conditions at all three boat launch locations, but deep pools are absent at the launch sites. Deep pools are an important habitat element for rearing sub-adults and adults.

Important rearing habitat for spring Chinook salmon include deep pools for both adults holding during the summer and juveniles rearing during downstream migration. Juveniles also require quiet areas in the river to rear such as side channels and river margins especially near physical features like large wood or boulders. These areas are located throughout the project area, but deep pools are absent at the launch sites.

Issue of TES/MIS Fish Migratory, Spawning, or Rearing Habitat

The location of boat ramps could affect TES/MIS fish migratory, spawning, or rearing habitat.

Unit of Measure. The analysis of this issue used qualitatively descriptions of the effects of project implementation. This description considered the quality of migratory, spawning, and rearing habitat of MIS (rainbow and Coastal cutthroat trout) and ESA listed species (spring Chinook salmon and bull trout) in current locations and proposed relocation sites.

Environmental Consequences

Effects of Alternative 1 – No Action

Direct and Indirect Effects

Migratory Habitat – There would be no change to migratory habitat for any fish species with the implementation of Alternative

Spawning Habitat – The boat launches do not have a direct effect on spawning habitat for TES/MIS fish because spawning habitat does not exist in direct proximity to any of the existing ramps. All bull trout spawning in the McKenzie River occurs upstream of Frissell Boat Launch (in Anderson and Olallie creeks), and therefore none of the alternatives have the causal mechanisms to affect bull trout spawning. During field investigations the closest spawning habitat found for other salmonid fishes (both TES and MIS) was downstream of the ramps at Bruckart. Spawning Chinook salmon were observed approximately 500 feet downstream of the existing ramp and on the opposite side of the river. At Frissell, the closest spawning was at Blue Pool, which is approximately ½ mile downstream; and at Paradise, the closest spawning habitat was over 1 mile downstream.

Cutthroat trout primarily spawn in tributaries to the McKenzie River so it is highly unlikely that the boat ramp project could affect their spawning habitat directly, or indirectly. Rainbow trout have been observed spawning in the main stem McKenzie River. However, the closest potential spawning sites are about ½ mile downstream from Frissell, about 1 mile downstream of Paradise, and about ¼ mile downstream of Bruckart.

Boat launch use and maintenance can have indirect effects on spawning habitat due to the need to occasionally replace gravel on ramps. Fine sediment associated with replaced aggregate could potentially impact spawning areas. However, it is unlikely that the amount of fines associated with regular gravel maintenance have measurable adverse effects on spawning habitat. For example if Alternative 1 were selected, gravel placed at ramp sites in order to maintain them would continue when needed. Typical quantities of gravel required to maintain the ramps are 1-2 cubic yards per year for all three ramps. However, there are years when no gravel is required for maintenance. Most of the gravel is placed at Frissell and Bruckart due to their positioning on the bank where they are subjected to the main river current. A “sediment budget” of the upper McKenzie River was recently conducted by Stillwater Sciences as a study for the Eugene Water & Electric Board (Stillwater Sciences 2006a). The study provided an estimate of average annual sediment yield in metric tons per year ($t\ y^{-1}$) for the upper McKenzie River, and the cumulative results for sediment yield up to the confluence of Scott Creek were 25,450 $t\ y^{-1}$. Scott Creek is just downstream of the Frissell launch site. Given the relatively minor amount of gravel that is used to maintain the ramps this alternative if selected would not have a significant effect on fish habitat in the main stem McKenzie River. In addition, during spawning ground surveys below all boat ramps in 2006 those gravel patches where spawning was possible did not visually appear to be adversely affected by fine sediments. The ongoing use and maintenance of the boat ramps could potentially affect spawning

habitat for TES/MIS fish but given study findings (Stillwater Sciences 2006a) and field investigations conducted by fisheries personnel, it is unlikely that ramp maintenance is having negative effects on spawning habitat.

Rearing Habitat – The type of river habitat needed for rearing TES/MIS fish (e.g. deep pools, pocket pools, or shallow river channel margins) depends on the species and life history stage of the particular fish.

The amount of gravel needed to maintain the ramps relative to the natural sediment regime is not sufficient to fill deep pools, or pocket pools given the stream discharge of the river and its ability to mobilize and transport gravel size sediments. Maintenance can have potential effects to margin habitat in direct proximity to the river. This would primarily affect Chinook salmon fry, and rainbow trout fry that would seek this shallow, low velocity habitat for cover after emergence from the redd. Sediments from the ramp could affect the spaces between cobbles (interstitial spaces) where small fish can take cover, however this impact would be limited to an area in direct proximity to the ramp and would likely change with seasonal flow regimes.

It is highly unlikely that bull trout fry would be found in direct proximity to the ramps due to the temperature regimes. Buchanan and Gregory (1997) indicate that optimal “early” fry rearing takes place at temperatures 4 - 4.5° C (39.2 - 40.1° F) and “late” fry rearing at temperatures from 4 - 10° C (39.2 - 50.0° F). Spence and others (1996) also indicated that these temperatures were optimal. Table 6 below displays stream temperature data collected by the Forest Service. Bull trout fry rear in streams like Olallie Creek and Anderson Creek where temperatures are cold. In the river temperatures are warm relative to the bull trout “natal” streams. River temperatures at Frissell Boat Launch are approximately 10.1° C as measured by Stillwater Sciences in 2005 downstream of Deer Creek, and all other main stem temperature (McKenzie River near Ranger Station [relatively close to Paradise], and the USGS gage at Bruckart Boat Launch – Table 7) show summer temperatures above 12° C which is too warm for optimal bull trout fry rearing. In addition to temperature conditions, the flow conditions in the river are high relative to the spawning tributaries and a small bull trout fry would have difficulty finding cover in the river. During field investigations no bull trout fry were located at any of the boat launch sites.

Spring Chinook fry can use margin habitat after emergence from the redd, but as they grow they will move to pocket pool habitat and eventually they will school in large, deep pools. Boat ramp maintenance could affect river margin habitat which in turn could affect fry habitat. As with rainbow and cutthroat trout fry, the effects would be limited to the area in direct proximity to the ramps and would be seasonal in nature. Relative to the amount of rearing habitat the McKenzie River provides for salmonid fishes, the impact to river margin habitat if Alternative 1 is selected is minor.

Table 4. Stream Temperature Data Collected by the Forest Service in 2005

Stream Name	Geographic Description of Sensor Location	Geologic Province	7-Day Average Maximum in Degrees Celsius	Date of Maximum Temperature
Anderson Creek (Boulder Cr / Frissell Cr 6th)	At Highway 126	New High Cascades	6.6	September 14
Boulder Creek (Boulder Cr / Frissell Cr 6th)	Near Mouth	Old High Cascades ^a	13.1	August 8
McKenzie River (Boulder Cr / Frissell Cr 6th)	Below Trail Bridge Dam	Primarily High Cascades at this point, but influenced by Smith River watershed and Trail Bridge Reservoir upstream	10.6	August 4
McKenzie River (McKenzie Bridge 6th)	Near Ranger Station	McKenzie River Glacial Valley ^b	12.2	August 9
Olallie Creek (Boulder Cr / Frissell Cr 6th)	At Highway 126	New High Cascades	5.5	July 10
Scott Creek (Boulder Cr / Frissell Cr 6th)	Near Mouth	Old High Cascades	12.2	August 10

^a The term Old High Cascades is used only to describe how Scott Creek and Boulder Creek cut through Pleistocene glacial deposits and “New” High Cascade lavas in their headwater areas, but further downstream incise underlying older High Cascades lava that have been subjected to fluvial processes for a longer period of time and McKenzie River glacial deposits.

^b The term “McKenzie River Glacial Valley” is used at this site since because the river is in a glacial valley confined by two east-west trending ridges, but is not a recognized province name.

Information was reviewed for the USGS gauge that is located immediately adjacent to Bruckart Boat Ramp. The USGS name for this gage location is:

- McKenzie River above South Fork near Rainbow, Oregon.
- USGS ID: 14159110

Table 5. Data from USGS Gage near Bruckart Boat Ramp in 2005

Date of 7-Day Average Maximum	Temperature in Degrees Celsius
July 20	13.7
August 8, 9, 10, and 11	13.5
September 1	12.2
September 30 ^a	9.8

^a The 7-day avg max for the month of September was on the 1st. The September 30 7-day avg max is provided to show the decreasing trend in temperature during the month of September.

Cumulative Effects of Alternative 1, No Action

The installation of the boat ramps and launch facilities at Frissell, Paradise, and Bruckart, have resulted in a situation that requires the annual input of gravel to the boat ramp structures to replace annual removal during high flows. The no-action alternative would not change the current need for added gravel each year. As stated above, relative to the natural sediment regime in the river, the amount of gravel used to maintain the boat ramps is having minor effects to fish habitat. Those effects are found in direct proximity to the ramps where fines can affect the interstitial spaces where rainbow, cutthroat, and Chinook fry could take cover.

There are no reasonably foreseeable future management actions along the upper McKenzie River that would result in additional, measurable change to fish habitat in the direct proximity to the boat ramps.

Effects of Alternative 2 – Proposed Action

Direct and Indirect Effects

Frissell Boat Launch – The relocation activities would take place on the southwestern terrace in a river bend. Individual trees removed at this site on the terrace would include Douglas-fir and western red cedar, and red alder where approximately a 12-16 foot wide area at the ramp location. Some of the upland trees and all the red alder provide shade to the river. However, the removal of these trees is not expected to have a measurable effect on stream temperatures for the following reasons. The majority of crowns on the large conifers would be maintained through project design, which avoids big trees where possible. Spring-fed flows from ground water sources dominate the river flow at this site during the summer and the removal of individual trees (approximately 12 to 20 red alder) would not be of the magnitude that the impacts could be measured at the site scale or the sub-watershed scale.

Evidence for this rationale can be found in the temperature monitoring results for the McKenzie River upstream and downstream of the Deer Creek confluence. Deer Creek is about 3 river miles upstream of the Frissell Boat Launch site and it contributes “warm” water to the McKenzie River that is 19.0 degrees Celsius (66.2 degrees Fahrenheit) in temperature (7-day average maximum in 2005). Monthly maximum 7-day average temperatures in the river above and below the Deer Creek confluence were 9.3o C (48.7o F) and 10.3 (50.5o F) in 2004 (Stillwater Sciences 2006b). In 2005, temperature monitoring above and below recorded 9.3o C (48.7o F) and 10.1 (50.2o F) (Stillwater Sciences 2006b). If a stream system the size of Deer Creek (a 23 mi² watershed) contributes warm 19.0o C water to the river, and can only have a 1o C (1.8o F) impact on temperatures, it seems extremely unlikely that the removal of a dozen or so red alder and individual upland trees in a spring-fed dominated location could be measurable.

The new ramp would cover approximately 640 square feet. The ramp would extend into the river approximately 10 to 15 feet from bank-full width. Up to 240 square feet of concrete pad would be in the river channel. The approximate area of disturbance for the loop road, staging area, and concrete pad for the toilet would be 10,936 square feet.

Construction of the two pull outs along Forest Road 2650 would occur on disturbed ground and no new fill would be required to improve them. These existing pull outs are approximately 50 feet in length and 90 feet in length, and are both 10 feet wide (total area of 1,593 square feet – this figure includes “tapers” on the pullouts). Since no new ground would be disturbed to improve these pull outs (i.e. they are already disturbed ground) the square footage of “improvement” is not included in the total area of disturbance shown in the following table.

Table 6: Summary of Project Area Impacts Described Above^a

Site	Total Area of Impact in Sq Ft.	Total Area Decommissioned in Sq Ft.	Total Area of Concrete Ramp in Bankfull Width in Sq Ft. ^b
Frissell	10,936	2,670	240
Paradise	3,439	0	480
Bruckart	19,900	10,000	240

^a These figures are approximate as designs are conceptual, and they represent a “worst case scenario.” That is, the total area impacted will likely be less and the total area restored will likely be greater. All of the area summarized is within the Riparian Reserve.

^b This figure is included in the “total impact” column and represents the amount of ramp that would be “in the water” during normal flows.

Decommissioning the existing boat launch on river-left involves removing the existing buttress logs and cable from the site. The river bank and a portion of the terrace would be restored. A portion of the existing pull-out access would remain for motor vehicles along State Highway 126 (see Appendix F, Figure 5).

The decommissioned boat ramp location and a portion of the highway pullout would be restored. The large pull out would be rehabilitated by importing topsoil and re-shaping the surface. The ramp site would include seeding with native seed and red alder, planting vine maple trees, big leaf maple, and conifers (Douglas-fir or Western red cedar depending on what is available). The vegetation would be monitored thru the seasons (for up to 2 years) and if the site requires additional seeding or tree planting due to mortality or for any other reason, it would take place during the appropriate planting season.

The large pull out would be rehabilitated by importing topsoil and shaping it into hummocks. These hummocks would also be seeded with native grass to serve as a barrier between the highway and the river by acting as a soil filter and as a berm that diverts water into existing vegetation. Vegetated hummocks are desired since this is along the West Cascades National Scenic Byway. The measure would keep vehicles from driving onto the area. The approximate area of decommissioning for these actions totals 2,670 square feet.

Paradise Boat Launch –Alternatives 2 and 3 take the same actions at Paradise Boat Launch, which would occur on the south river bank. The parking lot work in the day use area is far enough away (100 to 150

feet) from the river that trees removed would not impact shade conditions. No tree removal is proposed at the ramp location and staging area location.

The replacement concrete ramp at the existing site would have a decreased gradient relative to the existing ramp and would measure 40 feet by 32 feet (1,280 square feet). The approach road is currently paved so the only new paving expected at the ramp would be the apron in order to connect the loop road to the concrete ramp (approximately 710 square feet of new pavement). The ramp would extend into the river approximately 10 to 15 feet from bank-full width (up to 480 square feet of concrete pad in river channel). The total area at the ramp site that would be concrete and asphalt is approximately 1,990 square feet.

An excavator would need to wade approximately 25 feet into the river to place the 20 small boulders, 16 inches to 24 inches in diameter, further into the channel where the river can mobilize and relocate them. The river is approximately 145 feet wide in this location.

The road side parking sites in the day-use area are approximately 125 to 150 from the river and are currently used as unpaved parking spaces. This “additional” road side parking would formalize the areas by paving the bare sites. Some small trees less than 6 inches in diameter (big leaf maple, Western hemlock, and vine maple) would need to be cut. The additional areas would be 50 feet by 10 feet, and 80 feet by 10 feet which would increase the impervious area in the Paradise day use area by 1,449 square feet (this figure includes “tapers” on the pullouts).

An additional staging area close to the launch area would be designated by signing an area not currently vegetated (it is a former historic camp site established by the CCC). No aggregate would be placed on this staging area, and no real “on the ground” changes would occur except for signing to designate it as a staging area.

An existing user-trail that is within bank-full width would be improved by placing spawning size gravels (1 to 3 inch), relocating large woody material, and trimming riparian vegetation (Figure 7). This user trail is approximately 20 feet away from the river during base flow conditions. The rationale for placing spawning size gravel on the trail is due to its location within bank-full width. When floods mobilize gravel on the user trail, it would at least be appropriate for spawning in whatever location the river places it. The piece of wood to be relocated is 22 feet in length by 19.5 inches in diameter. It would be moved upstream onto the cobble bar to remain within the bank-full channel. The riparian vegetation to be trimmed is along the user trail and is comprised of alders and vine maple.

Bruckart Boat Launch – Relocation of the ramp to the new site downstream from Bruckart Bridge is on the same side of the river (river right). Therefore, all actions would occur on the north river bank and trees removed in this proposal would not be shade trees for the river, so no impact on stream temperatures at the site scale is anticipated.

The ramp would be prefabricated concrete, 16 feet wide by 40 feet in length (640 square feet) and would extend into the river approximately 10 to 15 feet from bank-full width (up to 240 square feet of concrete pad in river channel). The access road, loop road, turnout, parking stalls, staging area, and concrete toilet pad at the new have been designed to minimize the number of large trees to be felled and moved. The total approximate area of disturbance for these actions is 19,840 square feet.

The additional parking along Forest Road 19 would require fill material to widen the shoulders and paving. One parking area on the opposite side of Road 19 would be 90 feet long by 10 feet wide (900 square feet), and the other would be 150 long by 10 feet wide (1,500 square feet) The total area of parking expansion would be approximately 2,400 square feet.

Decommission the old site would require grass seeding the old ramp site with native grasses and red alder, planting vine maple, big leaf maple, and conifers (Douglas-fir or Western red cedar depending on what is available). The vegetation would be monitored thru the seasons (for up to 2 years) and if the site requires additional seeding or tree planting due to mortality or for any other reason, it would take place during the appropriate planting season.

Decommission the existing loop road that connects Bruckart landing to Forest Road 19 would be done by scarifying the surface layer 2 to 4 inches in depth. The road is a compacted, native surface road. The underlying subsoil is comprised of glacial-fluvial deposits that are very permeable and porous so no surface runoff is expected after scarification. Native grass seed would be applied to the scarified surface to prevent soil erosion and would be monitored for 2 years. If for any reason further seeding is required, it would take place during the appropriate planting season. The length of existing loop road that would be decommissioned is approximately 861 feet. The total approximate area that would be decommissioned is 10,000 square feet.

The use of equipment in and adjacent to streams could result in a risk of introduction of petroleum and other contaminants into the McKenzie River. Mitigation measures are in the design of the alternative to avoid this risk. Any equipment used for reconstruction or relocation activities that are in or directly adjacent to water would be required to use lubricating products other than petroleum. That is, vegetable oil based lubricants. Equipment would be required to be clean and free of any leaks before working in or directly adjacent to water.

Migratory Habitat: The implementation of the proposed action would have no direct effect on migratory habitat since it would not create barriers to upstream or downstream migration routes.

During in-river work to place the prefabricated concrete ramp there could be short term (measured in an hour or hours, not days) indirect effects due to turbidity pulses that “hug” the river bank where work is occurring. These pulses could cause migrating fish to move from turbid water to clear water and potentially delay the fish from migrating. However, since the turbidity pulse would be measured in hour(s) and not take up the entire river channel, any delay would be minor. In addition, river conditions at the new ramp sites and at Paradise are such that the deeper side of the channel is across the river from the

ramp where adults would be migrating during the summer months to their spawning areas. Based on previous work done on the boat ramp at the McKenzie Bridge campground, a turbidity pulse would be expected to “hug” the river bank where work is occurring and dissipate within 100 feet. Best Management Practices requirements would not allow a turbidity pulse to be visible 100 feet downstream of the work site that lasts half an hour, and based on the work done at McKenzie Bridge campground boat ramp it is expected that this BMP could be met.

Spawning Habitat: No effect to cutthroat spawning habitat is expected since they typically spawn in tributaries to the McKenzie River. No effect to bull trout spawning habitat is expected since they spawn in tributaries upstream from Frissell Boat Launch. No direct effects to spawning habitat are expected from the proposed action on any salmonid fish since no habitat exists in direct proximity to the proposed ramp sites or at Paradise.

A potential exists for indirect effects to spring Chinook salmon and rainbow trout in the form of fine sediments impacting redds, but they are expected to be immeasurable. This is because of the distance downstream to spawning locations.

At Frissell, the closest known spawning habitat for Chinook salmon or rainbow trout is at Blue Pool which is about ½ mile downstream of the proposed ramp location. Implementation of the proposed action could have an indirect effect on spawning habitat at Blue Pool if the turbidity plume reached that far. However, BMP's should prevent such an effect from occurring.

At Paradise the closest known spawning habitat is approximately 1 mile downstream and effects from activities at the boat ramp are not expected to have any effect on spawning habitat.

At Bruckart, the closest known spawning habitat downstream of the proposed boat launch is over 1000 feet away, and no effects from construction activities are expected to reach this far downstream.

Rearing Habitat: As was discussed in analysis for the no action alternative, this alternative is not of the scope that it would negatively affect rearing habitat that exists in the form of deep pools, or pocket pools. It would however change the river margin habitat from a natural substrate to a concrete boat ramp. The area of this impact would be limited. Frissell and Bruckart would impact approximately 240 square feet each, and Paradise 480 square feet. In addition to this impact, decommissioning activities at the old ramp sites would improve river margin habitat at Frissell and Bruckart. A length of river bank about 20 feet at Frissell and about 25 feet at Bruckart would be restored.

Given the amount of river margin habitat in the main stem McKenzie River relative to these impacts, the proposed action is not expected to have negative affects on the overall condition of rearing habitat of salmonid fish populations. However, the ramps would negatively affect a specific area of previous river margin habitat to concrete.

Cumulative Effects

With implementation of the proposed action, regular maintenance at the existing, poorly designed boat ramps would be eliminated. There would no longer be the need to place gravel on these sites and that would reduce the amount of sediment entering the river from human caused sources. The new ramps would be located on the less erosive side of the river and would be made of concrete. They would not require annual gravel supplementation for maintenance and hence less fine sediment should reach the river.

The decommissioning of the old boat ramps at Bruckart and Frissell would rehabilitate what are now bare river banks on the erosive side of the river. By vegetating these slopes this would reduce the amount of fine sediment entering the river at these sites. The current ramps at Bruckart and Frissell are designed to provide a direct avenue for surface runoff from the highway and parking areas to the river. Rehabilitation activities on the terraces would decrease the amount of direct surface runoff that enters the river. Rehabilitation would improve infiltration into the soil and ensure that surface runoff was directed thru vegetation before entering the river, which would be a beneficial cumulative effect to water quality, and hence to fish.

Considering the cumulative effects of the three boat ramps and launch facilities, Alternative 2 would result in decreased annual sediment release into the river in the proximity of the boat ramps, thereby reducing the cumulative effects of past action which installed poorly designed boat launches along the upper McKenzie River.

There are no reasonably foreseeable future management actions along the upper McKenzie River that would result in additional, measurable change to fish habitat in the direct proximity to the boat ramps.

Effects of Alternative 3

Direct and Indirect Effects

The Frissell and Bruckart launch sites would remain in the same location where they currently exist, but would be reconstructed to reposition them to reduce safety hazards and improve access. The repositioning requires 20 cubic yards of riprap placed at both ramps. The reconstruction design reduces maintenance needs by reducing the amount of gravel that is placed on the current ramps each year.

Frissell Boat Launch – The pre-fabricated concrete ramp at the existing site would be placed at a downstream angle and would require 20 cubic yards of rip-rap to armor the upstream side of the boat ramp. The boulders would be placed on the river bank and a portion of the river bed. The new ramp would be approximately 16 feet wide by 40 feet long (640 square feet) and it would extend into the river approximately 10 to 15 feet from bank-full width (up to 240 square feet of concrete pad in river channel). Five or six small trees would need to be cut down to place the new ramp at an angle. There are 5 hardwood trees (red alder and big leaf maple), and one Western red cedar. The existing parking area would be re-graded to minimize sediment transport to the river.

Paradise boat Launch – The actions at Paradise Boat Launch would be the same as in Alternative 2.

Bruckart Boat Launch –The pre-fabricated concrete ramp at the existing site would also be placed it at a downstream angle and would require 20 cubic yards of rip-rap would be required to armor the upstream side of the boat ramp. The boulders would be placed on the river bank and a portion of the river bed. The new ramp would be approximately 16 feet wide by 40 feet long (640 square feet) and it would extend into the river approximately 10 to 15 feet from bank-full width (up to 240 square feet of concrete pad in river channel). Six or seven small trees would need to be cut down to place the new ramp at an angle, which consist of 5 hardwood trees (red alder and big leaf maple), and two small Douglas-fir. The existing parking area would be re-graded to minimize sediment transport to the river.

Migratory Habitat

The effect to migratory habitat would be similar to Alternative 2 (i.e. a short term turbidity plume that could displace fish to the other side of the river, or delay migration). The new ramps would not pose a migratory barrier to any TES or MIS fishes, so there would be no direct or indirect effect to migratory habitat.

Spawning Habitat

The effects to spawning habitat would be similar to Alternative 2. That is, there is a potential for mobilized fine sediments to affect downstream spawning areas for rainbow trout and spring Chinook salmon. However, like Alternative 2 these effects are expected to be immeasurable due to the distance to downstream spawning locations.

Rearing Habitat

Alternative 3 would change specific locations within the river from natural river bed to concrete. The area would be similar to the area affected in Alternative 2, but the rearing habitat at the existing Bruckart and Frissell boat ramps is not optimal rearing habitat for juvenile TES or MIS fish due to the flow velocities. These two ramps are located on the side of the river where the main current is directed (the erosive side of the channel) and it would be difficult for small fish (fry) to take cover in these areas compared to the new ramp locations in Alternative 2.

Since the ramps would be constructed on the erosive side of the river they would likely require rip rap to minimize scour due to river flows. Approximately 20 cubic yards of rip rap would be required at Bruckart and Frissell. Schmetterling and others (2001) found that rip rap may provide habitat for juvenile salmonids and bolster densities on reaches of stream that have been “severely degraded.” They also found that rip rap does not provide the intricate habitat requirements for multiple age classes or species of fish provided by natural vegetated stream banks. Streambanks with rip rap have fewer undercut banks, less low-overhead cover and are less likely than natural streambanks to contribute large woody debris to the

stream (Schmetterling et. al. 2001). These examples of habitat simplification due to rip rap could be expected if Alternative 3 was implemented.

Cumulative Effects of Alternative 3

This alternative would reduce the amount of gravel required to maintain existing boat ramps due to their replacement with concrete ramps. However, since Bruckart and Frissell would remain on the erosive side of the river they would require rip rap to minimize scour. This rip rap along with a change from natural river bed to concrete would simplify habitat for TES and MIS fish. These salmonid fishes require complex habitats in order to carry out their life history requirements.

Highway 126 is directly adjacent to the river in some segments and in these areas rip rap is present. Paradise campground is also adjacent to the river and in some sections rip rap has been placed to armor the bank and protect the campground. If Alternative 3 was implemented, it would increase the amount of river bank with rip rap. Cumulatively this leads to simplification of habitat for TES and MIS fish which could have negative effects on their ability to fulfill life history requirements (e.g. freshwater rearing)

There are no reasonably foreseeable future management actions along the upper McKenzie River that would result in additional, measurable change to fish habitat in the direct proximity to the boat ramps.

Heritage Resources

Before the 1856 Dayton Treaty, west-side Indian tribes (likely ancestors of the Molalla and Kalapuya) used the upper McKenzie River area. Although there were no resident Indian bands in the South Fork McKenzie drainage at the time of white settlement, a band of Kalapuya Indians lived in a village at the mouth of the McKenzie, near its confluence with the Willamette River. They may have visited or traveled through the area during the summer. However, once they were relocated to the Grand Ronde or Siletz reservations in the mid to late 1850s, they could not easily get to the area. From 1860 to 1920, bands from the Warm Springs Reservation visited the area, gathering huckleberries, hunting, and grazing ponies in the summer and early fall. The area was also used for sheep grazing at the turn of the century from 1880-1920.

Field surveys for the Boat Launch project did not locate any new cultural sites at Frissell, Paradise, or Bruckart boat launches where proposed actions or alternative actions would occur. In addition, no cultural sites have been located in previous surveys of the area.

Implementation of Alternatives 1, 2, and 3 would not directly nor indirectly affect heritage resources since there would be no change to the integrity of heritage resource sites. During implementation, the District Archeologist would evaluate any subsequent discoveries.

Wildlife

Affected Environment for MIS/TES

Management Indicator Species (MIS) were addressed in the Willamette Forest Plan. They include the spotted owl, pileated woodpecker, marten, elk, deer, cavity excavators, bald eagle, peregrine falcon, and fish. All of the management indicator species may occur in the project area. Through Region-wide coordination, each Forest identified the minimum habitat distribution and habitat characteristics needed to satisfy the life history needs of MIS. Management recommendations to ensure their viability were incorporated into all Willamette Forest Plan actions. Current conditions for the spotted owl and bald eagle are discussed in Appendix B, the Wildlife Biological Evaluation.

The Endangered Species Act (ESA), administered by the U.S. Fish and Wildlife Service (USFWS), mandates protection of threatened and endangered species. Listed species are typically habitat-specific with narrow geographic and environmental distributions. Proposed, threatened, endangered, and sensitive (PETS) species have specific requirements under the ESA and Willamette National Forest Plan to maintain viability. Protection includes managing habitat to minimize impacts, as well as prohibition of noise disturbance during the breeding season. Consultation is required with USFWS on activities that may affect these species or their habitat.

The scale of analysis for the northern spotted owl, a Threatened Species, and other MIS is the project area because of the known distribution of spotted owls and associated owl home-range delineations. Past surveys for spotted owls have documented three spotted owl activity centers within 1.2 miles of the boat launch project. These three owl pairs have an established 100-acre late successional reserve delineated for each site.

Bald eagles have been observed flying through the McKenzie River corridor. Eagles utilize large old-growth conifers in proximity to large water bodies and abundant prey. Annual surveys are conducted to determine eagle use and occupancy.

Project activities would occur in the riparian areas adjacent to the McKenzie River that may provide dispersal habitat for harlequin ducks.

All boat launch areas are adjacent to highway 126 and the McKenzie River where ambient noise levels are continually high and where the large open corridors provide poor habitat due to exposure from aerial predators such as goshawks and great horned owls.

Survey and Manage Wildlife Species

On January 9, 2006 Judge Pechman signed an Order on Plaintiffs' Motion for Injunctive Relief that set aside the March 22, 2004 Survey and Manage ROD, reinstated the January 2001 Survey and Manage ROD, and instructed affected Forest Service and Bureau of Land Management units to "not authorize, allow, or permit to continue any logging or other ground disturbing activities on projects to which the

2001 ROD applied unless such activities are in compliance with the provisions of the 2001 ROD (as the 2001 ROD was amended or modified as of March 21, 2004).

To comply with this order, Forest Service and Bureau of Land Management units are required to survey for 2001 ROD (amended March 2004) Category A and C species.

Surveys were conducted for Survey and Manage and Protection Buffer Wildlife Species in all areas proposed for ground disturbing activities, prior to the effective date of the March 2004, amendment. No Survey and Manage mollusks, red tree voles, or great gray owls were found during these surveys.

Migratory Land Birds

Migratory landbirds and their required protection are outlined in the January 11, 2001, Executive Order “Responsibilities of Federal Agencies to Protect Migratory Birds.” A Memorandum of Understanding was signed between the USFS and USFWS to complement the January 2001, Executive Order. Agreed-to measures include identification of habitats needed by priority species. Habitats vary broadly for this large group of species. The Boat Launch Project Area contains populations of migratory landbirds typical of the western Cascades.

There are 85 bird species recognized as neotropical migrants on the Willamette National Forest. Thirty-five of these species found on the Willamette National Forest have been identified as species of concern (Sharp, Brian. 1992). These species are associated with old-growth, riparian, rocky cliffs, or grass habitats. Snags in the area may be providing important habitat for Vaux’s swifts, Williamson’s sapsuckers, and American kestrels. Old growth stands occupy portions of this landscape, which may be supporting Cooper’s hawks, olive-sided flycatchers, western wood-pewee, and mountain bluebirds. Riparian habitat associated with streams in the area may be providing habitat for riparian-associated species such as Williamson’s flycatchers, tree swallows, and red-eyed vireos.

Environmental Consequences

Effects of Alternative 1 – No Action

There would be no effect or impact on MIS or TES wildlife or other wildlife species of concern with this alternative. With no boat launch improvements implemented, there would be no loss of existing habitat and no noise disturbance would occur. Annual ramp maintenance activities would continue the existing short-term noise disturbance from equipment.

Effects of Alternative 2 and 3

Implementation of either Alternative 2 or 3 would have no effect on the northern spotted owl. The project area is within three historic 1.2 mile radius northern spotted owl home ranges. The closest known activity center is over 0.5 miles away. Individual tree removal would result in a minimal change to low quality dispersal habitat with an immeasurable effect. The project is adjacent to highway 126 and the McKenzie

River where ambient noise levels are continually high and where the large open corridors are providing poor habitat do to exposure from aerial predators such as goshawks and great horned owls.

Annual bald eagle surveys have failed to document any bald eagle nests or roosts in the project area. The closest bald eagle nest is over 2 miles away. Limited bald eagle foraging use occurs on the river. The limited scale of this project would not affect the ability of bald eagles to continue foraging within the vast river corridor.

Project activities would occur in the riparian areas adjacent to the McKenzie River that may provide dispersal habitat for harlequin ducks. Harlequins are very mobile and adaptable to human disturbances on the river (ie rafters and boaters). The felling and leaving on site of individual trees for safety and parking in riparian areas would benefit this species by supplementing down woody material in their habitat. This project is not expected to have a measurable impact on harlequin ducks.

Cumulative Effects

Since neither the proposed actions, nor Alternative 3 would not result in any additional direct effects on wildlife MIS, TES, migratory land birds, or Survey and Manage species, there are no additional cumulative effects to the above species or their habitat. There no reasonably foreseeable future actions within the analysis area that could result in additional cumulative effects.

Botanical

Affected Environment

Sensitive Plants

The Forest Service manual directs us to ensure the viability of sensitive botanical species as well as preclude trends toward endangerment that would result in the need for Federal listing (Forest Service, 1991). There are no listed Threatened or Endangered plant species on the Willamette National Forest. Other rare plants, often not associated with older forests, are compiled on a Regional Forester's Sensitive Species List (USDA Forest Service, 2006). These species and their habitats are often rare and limited in distribution. A prefield review was conducted in April 2004 to determine which sensitive species have historically been documented in the Boat Launch Reconstruction project area. There are no documented sites of sensitive plants in the project area.

Intuitive-controlled field surveys in April 2004 followed up the prefield review to determine presence of sensitive plant species within project area, as well as suitable habitat potentially affected by the proposed project. No sensitive plants were observed during these surveys.

Survey and Manage Botanical Species

As stated above in the Wildlife section regarding Survey and Manage wildlife species, the Forest Service and Bureau of Land Management units are required to survey for 2001 ROD (amended March 2004) Category A and C species. Intuitive-controlled field surveys in 2000 and 2001 followed up the prefield review to determine presence of sensitive plant species within those special habitat areas, as well as other potential habitats. No sensitive plants were observed during these surveys.

Survey and Manage botanical species are species that are genuinely rare or, because of lack of information about them, the agencies did not know whether they would adequately be protected by other elements of the Northwest Forest Plan. The list of species that have potential habitat within the planning area and Survey and Manage species located in the planning area can be found in the Botanical Resource Report located in Appendix D.

In 2004, the Record of Decision to Remove or Modify the Survey and Manage Mitigation Measure Standards and Guidelines was released (USDA Forest Service and USDI Bureau of Land Management. 2004a). As a result, some of the species that were formerly Survey and Manage are now managed under the interagency Special Status Species Program (SSSP) as sensitive species. A pre-field review of the project area was conducted to determine the presence of potential habitat for former Survey and Manage species. Surveys were conducted in 2000, 2001 and 2006 in these potential habitats. Results from the pre-field review and surveys are above in Table 41, and in Appendix D.

Environmental Consequences

Effects of Alternative 1 – No Action

Direct and Indirect Effects

The no-action alternative would have no direct or indirect impact on sensitive plants or Survey and Manage species that are managed under the Forest Service Sensitive Species Program. No potential habitat would be degraded or removed for these species under this alternative.

Effects of Alternative 2 and 3

Direct and Indirect Effects

There is potential habitat present in the project area for six species currently listed on the Willamette National Forest Sensitive Species List, 2006 (three are Survey and Manage lichens) listed in Appendix D. Surveys of the project area have not documented any sensitive plant species or Survey and Manage species. However, some of the unoccupied potential habitat that is present in the project area would be removed under both of these alternatives.

More riparian habitat would be removed with Alternative 2 as compared to Alternative 3. However, the absence of known populations in the project area would result in no direct and indirect effects to

sensitive and Survey and Manage plants; therefore producing no measurable impacts with either action alternative.

Cumulative Effects

The analysis area for cumulative effects is the existing boat launches, loop road, and parking areas, plus the proposed development areas for Frissell, Bruckart, and Paradise boat launches. These areas were chosen because activities outside the analysis area would have no effect on sensitive species, or Survey and Manage species with suitable habitat located within the project analysis area.

As discussed above, implementation of the proposed action or any alternatives would not have direct or indirect adverse effects on sensitive plants or Survey and Manage species species. Based on the analysis of this project there would be no incremental change to sensitive species or Survey and Manage species.

Noxious Weeds

Noxious weeds on the McKenzie River Ranger District are predominately located along roads, power line corridors, and at recreation sites. They are primarily introduced or spread by vehicle traffic, road maintenance, recreational user, and ground-disturbing activities, such as road construction.

Vehicular traffic and road maintenance oftentimes create enough of a foothold for weed establishment, while providing access (via motorized vehicles) to other un-colonized areas. Most weed species become established as a result of a soil disturbance activity. Once they are established, they are able to persist and reproduce with little competition from native vegetation.

There are numerous weed species known to occur adjacent to the boat launches and project area. Spotted knapweed (*Centaurea maculosa*), St. John's wort (*Hypericum perforatum*) and false brome (*Brachypodium sylvaticum*) can be found along stretches of Road 19 and Highway 126. Weeds along Highway 126 receive chemical treatments annually by the Oregon Department of Agriculture.

None of the aforementioned weeds are present at the existing launches or in the proposed development areas. Spotted knapweed is present at the current Frissell Boat Launch and Scotch broom (*Cytisus scoparius*) is abundant at the Bruckart Boat Launch. Design measures, mitigation measures, and Best Management Practices would be implemented to minimize their spread.

Direct, Indirect, and Cumulative Effects

The analysis area for cumulative effects is the existing boat launches, loop road, and parking areas, adjacent roads, plus the proposed development areas for Frissell and Bruckart. These areas were selected for the known distribution of noxious weeds and because it contains likely travel routes for the proposed project.

Even without past or present management (i.e. vehicular traffic from recreational outfitting) in the proposed project areas, noxious weeds would still be present from natural and biological vectors.

Implementing Alternative 2, with construction of 0.1 mile of paved loop road at Frissell Boat Launch and 0.1 mile of paved loop road at Bruckart Boat Launch, offers the greatest opportunity of noxious weed spread. There would also be a short-term increase in potential for noxious weed spread because it removes more riparian vegetation than the other Alternatives. However, Alternative 2 provides less disturbed ground over time at Paradise Boat Launch because it proposes to pave the existing parking areas where Scotch broom is found. Alternative 2 also proposes to decommission 861 feet of existing loop road that connects Bruckart landing to Forest Road 19. Decommissioning this loop road would reduce the spread of Scotch broom by limiting seed contact with human vectors. Native grass seed would be applied to the scarified surface to prevent soil erosion and would be monitored for 2 years.

The cumulative effect of the proposed action would be an overall decrease in noxious weeds within the project area, considering the new construction of paved loop roads and parking at Frissell and Bruckart, the paving of parking and staging at Paradise, and decommissioning the road currently connecting Bruckart Boat Launch with Forest road 19.

There are no other reasonably foreseeable future actions in the vicinity of the boat launches that would contribute to the spread of noxious weeds within the project areas.

Wild and Scenic River and State Scenic Waterway _____

The Section 7 analysis for the McKenzie River Wild and Scenic Waterway, which is included as Appendix E, has determined that:

The McKenzie River Boat Launches Project is consistent with Section 7 of the Wild and Scenic Rivers Act, and will have a direct effect on the river, but not an adverse effect on the values for which the river was authorized by Congress. The project is also consistent with the current Forest Land and Resource Management for the Willamette N.F. and the Record of Decision for Amendments of Land Management Planning Documents within the Range of the Northern Spotted Owl. The project is supported by the Upper McKenzie River Management Plan (1992). It is recognized that there will be short-term effects but that they are at an acceptable level. Free-flowing conditions will be maintained, and Outstandingly Remarkable Values will be maintained.

Concurrence was received from the Oregon Parks and Recreation Department on February 16, 2007.

Compliance with Other Laws, Regulations and Policies

This section describes how the action alternatives comply with applicable State and Federal laws, regulations and policies.

Federal Laws:

The Preservation of Antiquities Act, June 1906 and the National Historic Preservation Act, October 1966 – Consultation State Historic Preservation Office is completed under the Programmatic Agreement among the United States Department of Agriculture, Forest Service, Pacific Northwest Region (Region 6), the Advisory Council on Historic Preservation, and the Oregon State Historic Preservation Officer regarding Cultural Resource Management on National Forests in the State of Oregon, as amended in June 2004. Field surveys where ground-disturbing activities would occur in the project area have been completed. The surveys did not identify any sites. Should sites be found during ground disturbing activities, the District Archaeologist would be immediately notified. This project meets the criteria listed in Appendix C of the above-mentioned programmatic agreement, thus it is excluded from case by case review. Because heritage resources would not be affected by proposed activities under any action alternative, there would be no effect to any historic property listed in or eligible to the National Register of Historic Places.

The Endangered Species Act (ESA), December 1973 – The ESA establishes a policy that all federal agencies would seek to conserve endangered and threatened species of fish, wildlife and plants. Biological Evaluations for plants and wildlife have been prepared, which describes possible effects of the proposed action on sensitive, and other species of concern that may be present in the project area. A Biological Assessment was prepared for both the northern spotted owl, and for the threatened bull trout and spring Chinook salmon. Formal Consultation was required for bull trout and spring Chinook salmon. See “Consultation and Coordination – Coordination with Other Governments and Agencies.”

The Clean Water Act, 1987 – This act establishes a non-degradation policy for all federally proposed projects. Compliance with the Clean Water Act would be accomplished through planning, application and monitoring of Best Management Practices (BMPs) where needed.

Magnuson-Stevens Fishery Conservation and Management Act, 1976 (MSA) – This project is in the middle of the McKenzie River sub-basin. The McKenzie River channel is listed as Essential Fish Habitat (EFH) for spring chinook salmon. Consultation with NOAA Fisheries under the MSA has been conducted along with ESA consultation.

Inventoried Roadless Areas and Wilderness – There are no actions proposed within Inventoried Roadless Areas (IRAs) or Wilderness in the project.

Executive Order 13186: Neotropical Migratory Birds – There are 85 bird species recognized as neotropical migrants on the Willamette National Forest. Thirty-five of these species found on the Willamette have been identified as species of concern (Sharp 1992). A Memorandum of Understanding was signed between the USFS and USFWS to complement the January 2001 Executive Order.

There are no effects on populations of migratory landbirds typical of the western Cascades (See Appendix B).

Executive Orders 11988 and 11990: Floodplains and Wetlands – Executive Order 11988 requires government agencies to take actions that reduce the risk of loss due to floods, to minimize the impact of floods on human health and welfare, and to restore and preserve the natural and beneficial values served by floodplains. The proposed action would occur within 100-year floodplains.

Executive Order 11990 requires government agencies to take actions that minimize the destruction, loss, or degradation of wetlands.

Executive Order 12898: Environmental Justice – Executive Order 12898 requires that federal agencies adopt strategies to address environmental justice concerns within the context of agency operations.

The National Environmental Policy Act (NEPA), 1969 – NEPA establishes the format and content requirements of environmental analysis and documentation. Preparation of this EA was done in full compliance with these requirements.

The National Forest Management Act (NFMA), 1976 – The proposed action is consistent with the NFMA. (See Chapter 1, Forest Plan)

Forest Plan Consistency – The Willamette National Forest produced a Forest Plan in accordance with the National Forest Management Act of 1990, as amended. The Willamette Forest Plan, as amended, provides guidelines for management of the developed sites and providing river-oriented recreation. The Forest Plan also provides guidelines for management of Forest system roads on National Forest System lands. This action is in compliance with all natural resource management direction and established management standards and guidelines (see Chapter 1).

Other Jurisdictions – There are no other jurisdictions within any of the three boat launch project areas.

Energy Requirements and Conservation Potential – Some form of energy would be necessary the construction and installation of the boat ramps, loop roads, staging areas, and parking areas, which requires the use of mechanized equipment.

Prime Farmland, Rangeland, and Forestland – The proposal does not occur within or involve prime farmland or rangeland.

Unavoidable Adverse Effects – Certain activities associated with this action would take place directly in the McKenzie River (i.e. the placement of a pre-cast concrete ramp). Due to the need to conduct in-water work there are certain unavoidable adverse effects that could impact listed fish species (spring Chinook salmon and bull trout). This required the Forest Service to conduct formal consultation under the Endangered Species Act with the NMFS and USFWS. As part of the consultation process NMFS and USFWS provide, in a Biological Opinion, mandatory “terms and conditions” that the Forest Service must implement to minimize the impact on listed fish. Also see “Consultation and Coordination – Coordination with Other Governments and Agencies.” (see Appendix A.)

Irreversible and Irretrievable Effects – “Irreversible” commitment of resources refers to a loss of future options with nonrenewable resources. An “Irretrievable” commitment of resources refers to loss of opportunity due to a particular choice of resource uses. There would be an irreversible commitment of resources with the use of mineral materials to provide rock, gravel and asphalt paving in the construction of the new loop road at both Frissell and Bruckart boat launches. There would be an irretrievable commitment of resources in the minor amount of timber value in the trees cut for the clearing during construction of the loop roads. These trees are proposed to be used for in-stream fish habitat structures (see Chapter 2).

Monitoring Plan ---

Noxious Weeds

District personnel will complete noxious weed surveys after implementation, as a mitigation measure to determine if pressure washing off-road equipment before boat launch installation was effective. Noxious weed treatments would occur if necessary.

TES and MIS Fish

Water quality conditions will be monitored during boat launch construction to determine if there are any potential effects to TES/MIS fish. Vegetation (grass and trees) at rehabilitation sites and areas of new construction will be monitored for 2 years to ensure planting success. If monitoring finds the need for additional planting, it would take place during the appropriate season.

